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Striker Striker & Stenby
103 East Neck Road
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EXAMINER

ZACHARIA, RAMSEY E

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 12/31/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/030,936

Applicant(s)

KNOLL ET AL.

Examiner

Ramsey Zacharia

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23, 27, 28 and 30-33 is/are rejected.
- 7) ☒ Claim(s) 24-26 and 29 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 8. 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. Reference EP 440,975 in the information disclosure statement filed 15 October 2003 has been lined through because it does not include a concise explanation of its relevance, as required by 37 CFR 1.98(a)(3). It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 29 is objected to because of the following informalities: the term --light-- has been omitted at the end of the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1773

5. Claims 4, 18, 22, and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claims 4 and 22 are rendered indefinite because they contain improper Markush language. This rejection may be overcome by replacing the phrase "from the group including" (claim 4) and "selected from the groups including" (claim 22), with the phrase --selected from the group consisting of--. See MPEP 2173.05(h).

The phrase "and the like" in claims 4 and 22 also renders the claims indefinite because the claims include elements not actually disclosed (those encompassed by "and the like"), thereby rendering the scope of the claims unascertainable. See MPEP § 2173.05(d).

Furthermore, the "preferably" and "particularly preferably" render claims 4 and 22 indefinite because it is unclear whether the compounds recited after the above term is merely exemplary of the remainder of the claim, and therefore not required, or a required feature of the claims.

7. Claim 18 is rendered indefinite because it is unclear from the preamble of the claim whether claim 18 is intended to depend from claim 1. This rejection may be overcome by replacing the phrase "method for producing a layer, in particular according to claim 1," with --method for producing the layer of claim 1--.

8. Claim 31 recites the limitations "the photo-polymerization", "the photo-cross-linking", and "the photo-orientation" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claim 33 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim is directed to a use of a product, as opposed to a process, machine, manufacture, or composition of matter.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-4, 12, 16-21, 27, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Eguchi (U.S. Patent 5,498,762).

Eguchi teaches a liquid crystal device having an alignment film that comprises at least two layers of electroconductive polymers (column 3, lines 49-56). Suitable electroconductive polymers include polypyrrole, polyaniline, and polythiophene (column 5, lines 12-28). These polymers may be selectively doped with anions (column 6, lines 22-41). The alignment film is transparent (column 6, lines 61-64). The alignment film is aligned by rubbing, i.e. friction (column 7, lines 1-4).

Art Unit: 1773

Regarding claims 12 and 27, since the alignment film of Eguchi contains at least two layers, one of the layers will read on a bonding agent since it bonds the other layer to the electrode.

Regarding claims 16 and 17, doping selective areas of the alignment film will result in a pattern of conductive regions and non-conductive regions.

13. Claims 1, 2, 16, 18-20, 30, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Escher et al. (EP 374,865).

Note: the Derwent abstract of EP 374,865 is provided.

Escher et al. teach a liquid crystal display wherein the electrodes are in direct contact with the liquid crystal medium and at least one of the electrodes is also an orientation layer. The electrodes may be formed of an electroconductive polymer. Orientation is performed by rubbing, i.e. friction.

Regarding claim 16, since the electroconductive polymer is an electrode it will in a pattern.

14. Claims 1-5, 16-21, and 30-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Gluck et al. (WO 99/30352).

Note: the Derwent abstract of WO 99/30352 is provided.

Gluck et al. disclose an embodiment comprising an oriented layer of electrically conductive, transparent, and photostructurable PEDT/PSS on a substrate. The layer comprises a

Art Unit: 1773

pattern of insulating segments. Gluck et al. also disclose a method for the manufacture of the layer that reads on instant claims 18-21 and 30-32.

This rejection under 35 U.S.C 102(b) will be withdrawn upon filing of a certified English translation of the original patent to which priority is claimed as required by 35 U.S.C. 119(b).

However, the rejection will then be reapplied under 35 U.S.C. 102(a).

Claim Rejections - 35 USC § 102 / 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 6, 7, and 14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Eguchi (U.S. Patent 5,498,762).

Eguchi teaches all the limitations of product claims 6, 7, and 14, as outlined above, except for certain process limitations. Specifically, Eguchi do not teach that the electrically conductive polymers were formed by means of photopolymerization (claim 6), oriented by photo-orientation (claim 7), or that the bonding agent is oriented by photo-orientation (claim 14).

However, the conductive polymers of Eguchi have undergone polymerization and the conductive layer and bonding layer have been oriented. While the method of polymerization and orientation may be different, the claims are directed to products not processes. The determination of patentability for a product-by-process claim is based on the product itself and not on the method of production. If the product in the product-by-process claim is the same or

Art Unit: 1773

obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. See MPEP § 2113. Since the resulting material appears to be the same as that of claims 6, 7, and 14 (since it is polymerized and oriented), the burden is on the applicant to conclusively demonstrate that the claimed product differs in kind from that of Eguchi.

17. Claims 6 and 7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Escher et al. (EP 374,865).

Escher et al. teach all the limitations of product claims 6 and 7, as outlined above, except for certain process limitations. Specifically, Escher et al. do not teach that the electrically conductive polymers were formed by means of photopolymerization (claim 6) or oriented by photo-orientation (claim 7).

However, the conductive polymers of Escher et al. have undergone polymerization and have been oriented. While the method of polymerization and orientation may be different, the claims are directed to products not processes. The determination of patentability for a product-by-process claim is based on the product itself and not on the method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. See MPEP § 2113. Since the resulting material appears to be the same as that of claims 6 and 7 (since it is polymerized and oriented), the burden is on the applicant to conclusively demonstrate that the claimed product differs in kind from that of Escher et al.

Claim Rejections - 35 USC § 103

18. Claims 1-16, 18-23, 27, 28, 30, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Escher et al. (EP 374,865) in view of Jonas et al. (U.S. Patent 5,766,515).

Escher et al. teach a liquid crystal display wherein the electrodes are in direct contact with the liquid crystal medium and at least one of the electrodes is also an orientation layer. The electrodes may be formed of a metal oxide or an electroconductive polymer. Orientation is performed by rubbing, i.e. friction.

Regarding claim 16, since the electroconductive polymer is an electrode it will in a pattern.

Escher et al. do not appear to teach details regarding the nature of the electroconductive polymer. Moreover, ITO is cited as a specific material for the electrode.

Jonas et al. teach a composition comprising a polythiophene and an organic compound containing dihydroxy or polyhydroxy and/or carboxyl groups that may be used to form transparent electrodes in liquid crystal displays (column 1, lines 25-45). The composition may be used in place of ITO as a means for reducing the cost of the resulting product (column 1, lines 13-23). Organic polymeric binders and crosslinking agents may be added to the composition (column 2, lines 44-47). In the embodiment of Example A), the electroconductive polymer comprises polyethylene dioxythiophene doped with polystyrene sulphonic acid (column 5, lines 1-15).

One of ordinary skill in the art would be motivated to use the electroconductive polymer of Jonas et al. for the electrode of Escher et al. in place of ITO to reduce the cost of the resulting liquid crystal display device.

Art Unit: 1773

Regarding claims 6-11 and 13-15, while Escher et al. taken in view of Jonas et al. do not teach the process limitations of these claims (e.g. that the electrically conductive polymers were formed by means of photopolymerization, oriented by photo-orientation, and photo-crosslinked), they do teach all the product limitations (the resulting product is polymerized, oriented, and crosslinked). As discussed above, the determination of patentability for a product-by-process claim is based on the product itself and not on the method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. See MPEP § 2113. Since the resulting material appears to be the same as that of instant claims 6-11 and 13-15 (since it is polymerized, oriented, and crosslinked), the burden is on the applicant to conclusively demonstrate that the claimed product differs in kind from that of the prior art.

Therefore, the inventions of claims 1-16, 18-22, 27, 28, 30, and 33 would have been obvious to one of ordinary skill in the art at the time the inventions were made.

Allowable Subject Matter

19. Claims 24-26 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

20. The following is a statement of reasons for the indication of allowable subject matter.

The inventions of claims 24-26 and 29 all are directed to a method of forming an oriented layer on a substrate wherein the layer comprises an organic, electrically conductive, transparent polymer. In claim 24, the polymer is irradiated with linearly polarized light to polymerize and

Art Unit: 1773

oriented it. In claims 25 and 26, the polymer is modified with photo-crosslinkable substituents and then crosslinked by irradiation. In claim 29, the layer further comprises a bonding agent wherein the bonding agent and polymer anisotropically crosslink when irradiated with linearly polarized light.

Eguchi, Escher et al., and Gluck et al. represent the closest prior art. However, none of these references teach or fairly suggest orienting their polymer layer by irradiating the layer with polarized light. Moreover, none of the references teach or fairly suggest attaching a photo-crosslinkable substituent to the electrically conductive polymer then crosslinking the polymer by irradiation.

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (703) 305-0503. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Ramsey Zacharia
Primary Examiner
Tech Center 1700